form of my M. fuscula; and possibly by a typographical error its length has been indicated as $3\frac{1}{2}$ lin., since in the description it is compared with "M. impura," fuscula and tuberum, which species are

little more than a line long.

14. "M. læviuscula" (l. c. 54. 27) is identical with my M. nitidula; very possibly I have erroneously described its antennæ as consisting of twelve joints; if so, I shall be happy to rectify my mistake as soon as I have an opportunity of re-examining my northern specimens. It may be remarked that the intermediate articulations of the flagellum are closely approximate.

In M. muscorum, Foerster, l. c. 59.31, which I have not seen, I can scarcely recognise my Myrmica of the same name, for the antennæ entirely pale and the abdomen with a fuscous band, appear to indicate a different species. M. Foerster does not state whether his species has the thorax continuous above, or with a distinct transverse

suture.

I trust shortly I shall have another opportunity of returning to this subject.

PROCEEDINGS OF LEARNED SOCIETIES.

ZOOLOGICAL SOCIETY.

June 11, 1850.—W. Spence, Esq., F.R.S., in the Chair.

The following paper was read:-

Synopsis of the species of Antelopes and Strepsiceres, with descriptions of some new species. By J. E. Gray, Esq., F.R.S., P.B.S. etc.

The genera in this Synopsis are arranged after the plan, first suggested in a paper on the genera of the Hollow-horned Ruminants (Bovidæ) in the 'Annals and Mag. of Nat. Hist.' xviii. 227.

ANTELOPES.

The Antelopes contain a large number of species separated into several genera, which may be arranged in the following sections:—

I. The Antelopes of the Fields have a tapering nose, with the nostrils bald within.

1. The *True Antelopes* are light-bodied and limbed, and small-hoofed, with a short or moderate tail covered with elongated hair to the base, horse breath or covered.

the base; horns lyrate or conical.

2. The Cervine Antelopes are large-sized, rather heavy-bodied and large-hoofed, and have an elongated tail with short hair at the base and tufted at the end; horns lyrate or conical.

3. The Caprine Antelopes are heavy-bodied and limbed, and large-Ann. & Mag. N. Hist. Ser. 2. Vol. viii. 9

hoofed, with a very short, depressed tail covered with hair to the base; horns conical.

II. The Antelopes of the Sandy Deserts have a broad nose, and the nostrils lined with bristles within.

4. The Equine Antelopes have the nose very broad, soft, spongy,

and bristly.

- 5. The Bovine Antelopes have the nose moderately broad, with a black, moist muffle.
- I. The Antelopes of the Fields. Nose tapering, the nostrils bald within, close together in front and diverging behind.
- 1. The True Antelopes. Body moderate-sized, elegant; legs slender; tail moderately elongate, hairy; horns placed over the eyebrows.
- A. Horns lyrate (or rarely cylindrical, subspiral), strongly ringed at the base; nose ovine, without any naked muffle; deep inguinal pouches; and tear-bag generally well-developed.

1. SAIGA.

Horns short, strong, annulated, lyrate, white; nose very high, compressed, rounded; nostrils very close together; tear-bag distinct; fur soft.

1. SAIGA TATARICA. The Colus or SAIGA.

Pale yellowish, crown and back greyish washed; belly and anal

region beneath the tail white; young, crown greyer.

Capra Tatarica, Linn. S. N. 97.—Antilope Saiga, Pallas.—Ibex
imberbis, Gmelin.—Antilope Colus, H. Smith.—Colus Strabonis, Gesner.—Colus Tartarica, Wagner.—Cervicapra, sp. Blainv.—Saiga tatarica, Gray, Knowslev Menag. 3.

Inhabits Siberia. Cab. Brit. Mus.

2. KEMAS.

Horns elongated, rather lyrate; nose with a dilated pouch on each side; tear-bag distinct? hair close, erect, spreading; nose-hole of skull very large; females hornless.

1. Kemas Hodgsonii. The Chiru.

Pale brown; chest, belly and inside of the limbs white; front of

face and front of legs blackish.

Antilope Hodgsonii, Abel.—A. Kemas, H. Smith (not horns, t. 181. f. 6) .- A. Chiru, Lesson.-Kemas Hodgsonii, Gray, Knowsley Menag. 3.

Inhabits Thibet. Cab. Brit. Mus.

3. GAZELLA, H. Smith.

Horns strong, lyrate, black; face tapering; nose simple; tear-bag distinct; fur short, close-pressed. Females with smaller horns; teats four.

* Knees with tufts; back and rump brown, vent white.

† Lower part of side with a dark oblique streak; feet with a tuft of black hair beneath.

1. GAZELLA DORCAS. The GAZELLE.

Fur rather elongate and harsh, grey brown; outside of fore legs, broad oblique streak along the side, edge of anal disc, front of face and face-streak, dark brown; face-streak, throat, chest, belly, inside of thigh and anal disc, white; tuft at under side of feet and end of tail black; knee-tufts blackish; young, back and side-streak rather paler.

Capra Dorcas, Linn.—Antilope Dorcas, Pallas; Licht. 3. t. 5.—

A. Gazella, Pallas.—Gazella Kevella, H. Smith, \(\rho \therefoldar \).—G. Corinna,

H. Smith, \(\rho \therefoldar \).—Gazelle, Buffon, H. N. xii. t. 22-25. \(\rho \therefoldar \).—Kevel, Buffon, H. N. xii. t. 26. \(\rho \therefoldar \). not F. Cuvier.—Corinne, Buffon, H. N. xii. t. 27. \(\rho \therefoldar \). t. 30 (not F. Cuvier); Cuvier, Menag. Mus. t. .—Kevel gris, F. Cuvier, Mam. Lithog. t. 3.—Antilope Cora, H. Smith.—

A. Arabica, Hemprich and Ehrenb. Symb. Phys. t. 5; Licht. Saugth. t. 6.—A. Cuvieri, Ogilby, Proc. Z. S. 1840, 35; Frazer, Zool. Typ. t.

Var. Nose with a dark spot or streak.

Var. Larger, legs thicker.

Gazella Dorcas, var. Gray, Knowsley Menag. t. 3.

Inhabits N. Africa; shore of Red Sea; Mogador (Willshire).

The Earl of Derby has specimens which he calls Gazella vera, figured Knowsley Menag. t. 3; they are rather larger, greyer, and the legs are much thicker and heavier than the specimens from the shore of the Red Sea. The fur is similar, but not quite so long on the under side of the neck. The Kevel gris (F. Cuvier, Mam. Lith.) well represents this variety.

The A. Cuvieri of Ogilby, from Morocco, is a much larger animal than the common G. Dorcas, but agrees with it in other characters,

except, it is said, in having longer ears.

M. F. Cuvier (Mam. Lithog. vii. t. 8. $\mathfrak P$.) has figured and described an Antelope from Sennaar under the name A. leptoceros, which he says is very like A. Dorcas, but has larger horns, those of the males being twice and of the females half as long again as the head. The horns vary greatly in length in our specimens.

†† Upper part of sides with a pale streak.

2. GAZELLA ISABELLA. The ISABELLA GAZELLE.

Fur short, very soft; pale yellowish brown, with a broad, rather paler oblique streak on the upper part of the side; knee-tufts, front of face and lower face-streak, darker yellow brown; upper face-streak, chest, back edge of tarsus, under side of feet, inside of limbs, belly and vent, white; tail black. Female, horns very slender, longer than the head. Young, paler, the lower part of the sides rather darker.

Gazella Isabella, Gray, Ann. and Mag. Nat. Hist. 1846.—Antilope Iridis (Die Iris Antelope), Licht.—A. Dorcas, Licht. Darstell.

t. 5.—A. Dorcas, var. a. Sundevall.

Inhabits N. Africa; Egypt (J. Burton, Esq.), Kordofan (Sundev.). This species is easily known from the foregoing by the softness and fineness of the fur, and the lower side-streak being of the same colour

as the back, and from it and the following by having no dark edge to the anal disc.

3. GAZELLA SUBGUTTUROSA. The JAIRON.

Pale brown; upper part of sides with a broad, rather paler streak; crown and knee-tufts greyer; face-streak indistinct; nose, lower part of sides, belly, hinder side of fore and front side of hinder limbs and anal disc white; streak on haunches dark brown; end of tail blackish.

Antilope subgutturosa, Guldenst.; Pallas; H. Smith, Griff. A. K. t. 183. f. 5, horns.—Capra Ahu, Kemp.—A. Dorcas, var. persica,

Rüppell.—Gazella subgutturosa, Gray, K. Men. 4.

Inhabits Tartary, Armenia and North Persia. Cab. Brit. Mus. Larger than the Chikara.

** Knees with tufts; rump mark and throat-spots white: no dark side-streak; tail slender, compressed, only hairy above (Dama, Bennett).

4. GAZELLA SOEMMERINGII. The ABYSSINIAN MOHR.

Pale brown; nose, forehead and lower edge of face-streak and end of tail blackish; chest and belly, angular mark on rump above the tail, face-streak and spot on the throat white; limbs pale. Female, forehead paler in the centre.

Antilope Soemmeringii, Cretzchm. in Rüppell, Zool. Atlas, t. 19 &.

-Gazella Soemmeringii, Gray, K. M. 5.

Inhabits Lower Abyssinia; Sennaar. Brit. Mus.

5. GAZELLA MOHR. The MOHR.

Bay; chin, spot on throat, chest, belly, edge and inside of limbs and angular spot on rump above the tail white; spot on side of face and end of tail black.

Antilope Mohr, Bennett, Trans. Z. S. i. t. 8; Knight, M. A. N. f. .—
A. Dama, var. occidentalis, Sundevall.—Gazella Mohr, Gray, K. M. 5.
Inhabits Morocco. Mus. Zool. Soc. Portendic. There called

Seni-ci (Mr. Whitfield). Mus. Brit.

The specimen in the Frankfort Museum, which was received from the Zoological Society, is one-third smaller than the Andra. It is brown, rump mark, lower part of the sides, belly, inside and edge of legs white, face iron-grey with longer hair at the base of the horns; horns large, thick, the face-streak indistinct from the pale colour of the head.

There is a fine specimen of this species living at Knowsley, and a female which died on the passage in the British Museum.

6. GAZELLA DAMA. The NANGEUR.

Bay; chin, spot on throat, belly, lower part of sides and hinder part of the back, inside of the limbs white; no spot on side of the face.

Antilope Dama, Pallas.—Gazella Dama, Gray, K. M. 5.—A. rubra, Afzelius.—Nangeur, Buffon, H. N. xii. t. 32. f. 3. t. 34.

Inhabits W. Africa; Senegal.

Not seen since Buffon's time; may be a bad figure of the former.

7. GAZELLA RUFICOLLIS. The ANDRA.

Whitish: neck and front part of the middle of the back reddish; no face-streak.

Antilope ruficollis, H. Smith, G. A. K. v. 205 .- A. Andra, Bennett.—A. Dama, Licht. Saugth. t. 3, 4; Rüppell, Zool. Atlas, t. 14, 16; Ehrenberg, Symb. Phys. t. 6.—A. Dama, var. orientalis, Sundevall .- Gazella ruficollis, Gray, K. M. 5.

Var. Young? with an indistinct narrow brown streak across the outside of the thighs, and the forehead iron-grey, with longer hair at

the base of the horns; horns small. Mus. Frankfort.

Inhabits North Africa; Kordofan. Brit. Mus. 2. These species differ in size as well as markings. The Mohr and Andra differ from G. Soemmeringii in being of much larger size, and in wanting the black face and streaks. Bennett's Mohr has only an angular white spot on the rump, like G. Soemmeringii; Buffon's Nangeur is smaller, and has more white on the rump, thighs and sides; and the Andra, which agrees with the figures cited, is almost

*** Knees without tufts (but with rather longer hair, forming a linear keel in front); back and rump brown; sides with dark streak.

8. GAZELLA RUFIFRONS. The Korin.

all white, with a reddish neck and withers.

Bay brown; sides above paler, with broad dark streak below; tail black; chest, belly, inside of legs, back edge of tarsus, and under side of feet and anal disc white; face bright bay, side-streak broad white.

Gazella rufifrons, Gray, Ann. and Mag. Nat. Hist.—Kevel, male, F. Cuvier, Mam. Lithog. t. 3.—Corine, F. Cuvier, Mam. Lithog. t. . young ? .- A. lævipes, Sundevall. - Gazella rufifrons, Gray, K. M. 5. t. 4.

Var. Nose blackish above (adult \mathfrak{P}).

Young; pale yellowish, side-streak brownish.

Inhabits W. Africa; Senegal. Mus. Paris. Gambia (Mr. Whitfield), called Seni. Brit. Mus. Sennaar (Sundevall).

Buffon mentions a Corine as coming from Senegal, but he says it is smaller than the Kevel, and Daubenton says that it has knee-tufts, so that it cannot be this species. Indeed the Gazelle, Corine and

Kevel of Buffon are clearly all A. Dorcas of this memoir.

The Kevel figured by M. F. Cuvier well represents this species. He says it was sent from Senegal, and probably it has not knee-tufts, for they are not indicated in the figure or mentioned in the text; for, like other descriptions of this author, though it occupies more than two pages, all the peculiarities of the species are left out. The Corine of the same author, also from Senegal, well represents the young. M. F. Cuvier says the Kevel and Corine and A. Dorcas form one species, but afterwards, under Kevel gris, he thinks they may be two.

4. PROCAPRA, Hodgson.

Horns strong, elongate, lyrate, black; face tapering, nose simple; tear-bag none; knee-tufts none; tail very short: female hornless; teats two. Asia; not gregarious.

1. PROCAPRA GUTTUROSA. The DSEREN.

Pale yellowish; hair long, soft, of anal region short, white; tail black.

Antilope gutturosa, Pallas, Spic. xii. 45. t. 2; H. Smith.—Gazella gutturosa, Gray, Knows. Menag. 3.

Inhabits Mongolia, Siberia. Cab. Brit. Mus., male and female. Thibet. Mus. Ind. Comp.

2. PROCAPRA PICTICAUDA. The RAGOA or GOA.

Hair sordid, brown with pale rufous tips; under side, inside of ears, limbs and anal disc, reddish white; tail black.

Procapra picticauda, Hodgson, J.A.S. Bengal, 1846, 173. 334. t. Inhabits Thibet; in the plains. Brit. Mus., skulls. Perhaps same as former in summer fur.

5. TRAGOPS, Hodgson.

Horns lyrate, short, black; face tapering, nose simple; "tear-bag none;" teats two: females with small horns. India; not gregarious.

1. TRAGOPS BENNETTII. The CHIKARA.

Bay brown; sides uniformly coloured; knee-tufts, end of nose and tail black; streak on haunches blackish; face-streak, chest, belly and inside of limbs white.

Antilope Bennettii, Sykes.—A. Christii, Gray.—A. Bharatensis, Hodgson.—A. Hazenna, I. Geoff., Voy. Jacq. Mam. t. 6, bad?—A. Dorcas, var. E., Sundevall.—Tragops Bennettii, Hodgson, 1847.

Inhabits India. Cab. Brit. Mus.

The feet are generally blackish, but sometimes brown like the back.

6. Antidorcas, Sundevall.

Horns lyrate, short, black; face tapering, nose simple; tear-bag not remarkably distinct; back with an expansile white streak or fold; hair close-pressed; knees not tufted: females with small horns.

1. Antidorcas Euchore. The Springboc of Tsebe.

Pale brown; face, throat, chest, belly, broad expansile streak on back to base of tail, edge and inner side of limbs white; face-streak and middle part of forehead pale brown, side-streak oblique, dark brown: young paler; side-streak paler, back-streak distinct.

Antilope Euchore, Forster, Licht. t. 7; H. Smith; Harris, W.A.A. t. 3.—A. saltatrix, Link.—A. marsupialis, Zimm.—A. Pygarga, Blumenb.—A. dorsata and A. saliens, Lacep.—A. Ibex, Afzelius, 1810.—Gazella Euchore, Gray, Know. Men. 6.

Inhabits S. Africa. Brit. Mus.

7. ÆPYCEROS, Sundev. MSS.; Antilope, Gray.

Horns elongate, wide-spreading, lyrate, black; face tapering, nose simple; knees not tufted, feet with tuft of (black) hair near pastern; teats two; no trace of suborbital sinus (*Harris*).

1. ÆPYCEROS MELAMPUS. The PALLAH OF ROOYE Boc.

Bay, sides paler beneath; belly, anal disc and lower side of tail white; crown, anal streak and tip of tail blackish; tuft above feet and back of feet black.

Antilope Melampus, Licht.; H. Smith, t. 181. f. 7; Harris, W. A. Africa, t. 15.

Inhabits S. Africa. Brit. Mus.

8. Antilope, H. Smith; Cervicapra, Gray.

Horns elongate, subspiral, erect, diverging; face tapering, nose simple; tear-bag large. India; gregarious.

1. ANTILOPE BEZOARTICA. The ANTELOPE.

Grey brown; lips, orbits, chest, lower part of sides and belly, edge and inside of limbs white; nose, front of shoulder and outside of

thigh, end of tail and front of feet blackish; neck redder.

Capra bezoartica, Aldrov.—C. Cervicapra, Linn.,? H. Smith.—A. Cervicapra, Pallas, Gray, Ill. Ind. Zool. t. .—Antilope, F. Cuv. Mam. Lith. t. . ? .—Cervicapra bezoartica, Gray, Knowsley Men. 6.

Var. and young. A narrow pale streak on the upper part of each

side.

Antilope bilineata, Temm., Gray, Illust. Ind. Zool. t. Inhabits India. Brit. Mus.

B. Horns small, slender, straight, conical, tapering, more or less diverging and often bent forward at the tip; the muffle is generally large and moist.

+ Tear-bag large; muffle generally large.

9. Tetracerus, Leach.

Muffle large; tear-bag large, longitudinal; horns, two pair very short, conical, straight; knee-tufts none: female hornless.

1. Tetracerus quadricornis. The Chouka.

Front pair of horns conical, distinct.

T. quadricornis, H. Smith, G. A. K. t. 181. f. 3. t. 186.—Antilope quadricornis, Blainv.—A. striaticornis, Leach.—A. tetracornis, Hodgson.—A. Chickara, Hardw.; H. Smith.—T. Chicara, F. Cuv. Mam. t. . J.—Cervus albipes, F. Cuv. Mam. Lith. t. . female.

Inhabits India, Himalaya. Brit. Mus. Thibet. Mus. Ind. Comp. M. De Blainville in describing this animal has read *Moorshadabad*, the habitat, for *Hoornadabad*, and thought it the name of the animal.

2. Tetracerus subquadricornutus. The Junglibukra.

Front pair of horns rudimentary, tubercular; hinder horns conical, subcylindrical; pale brown; side rather paler; chest, belly, inside and front of legs whitish; feet paler, varied.

Var. Female, front of legs blackish.

Antilope subquadricornutus, Elliot, Madras Journ. 35. t. 4. f. 2.— Brown Antelope, Sykes.

Inhabits Madras. Brit. Mus. Larger than the former.

Mr. Hodgson, in MacClelland's Calcutta Journ. Nat. Hist. 1847, notices and figures five species of this genus: 1. T. Iodes (rusty-red), t. 4. f. 3, and 2. T. paccerois (full-horned), t. 4. f. 1, 2, from skull.

CALOTRAGUS, (part) Sundevall; Oreotragus, (part) Gray; Redunca, (part) H. Smith; Tragulus, H. Smith; Cervicapra, sp. Blainy.

Muffle large; tear-bag arched, transverse; horns subulate, elongate, erect; hoofs triangular, flattish beneath, acute in front; crown smooth; tail very short; groin and orbit nakedish: females hornless; teats four; the knees not tufted; inguinal pore none; ear elongate; false hoof small or none.

* False hoofs none.

1. CALOTRAGUS TRAGULUS. The STEINBOC.

Fulvous, ashy; hair uniform; small spot on nose, and two diverging streaks on crown to nape blacker; upper part of throat, chest and abdomen white; ears three-fourths the length of the head; false hoofs none.

Antilope Tragulus, Forster, Licht. t. 14.—A. rupestris, H. Smith; Harris, W. A. A. t. 25. f. 2.—A. campestris, Thunb. 1811; Afzelius, 1815.—A. pallida, H. Smith.—A. Pediotragus, Afzelius.—A. fulvorubescens, Desmoul.—A. rufescens, H. Smith, G. A. K. t. 188.—Calotragus tragulus, Gray, Knowsley Menag. 7.

Var. Without the black crown-streaks, throat whiter.

Inhabits S. Africa. Brit. Mus.

This species varies much in colour, perhaps according to the season: sometimes the hairs are whitish at the tip, giving the fur a glaceous appearance; the black streaks are as distinct in the young as in the adult.

** False hoofs small.

2. CALOTRAGUS MELANOTIS. The GRYS Boc.

Red bay, with intermixed white hairs, crown with two dark streaks;

ears two-thirds the length of head; false hoofs small.

Antilope Melanotis, Thunb.1811; Afzelius; Licht. S. t.12; Harris, W. A. A. t. 26.—A. grisea, Cuvier, D. S. N. ii. 244, 1816; H. Smith.—A. rubro-albescens, Desmoul.—Calotragus melanotis, Gray, Knowsley Menag. 7.

Var. pallida. Pale ashy white, hairs some white, others lead-

coloured with grey tips. Brit. Mus.

Inhabits S. Africa. Brit. Mus.

11. Scopophorus, Gray; Calotragus, part Sundevall.

Muffle small, bald; tear-bag transverse; horns subulate, elongate, acute, slightly recurved at the tip; knees largely tufted; inguinal pores distinct and bearded; ears moderate, with a naked spot on the outside of their base; hoofs triangular, false hoof distinct.

1. Scopophorus Ourebi. The Ourebi.

Temple-spot small, indistinct; fur red-brown; cheeks paler; crown darker red brown; orbits, chest, belly, and middle of upper part of inner side of legs white; end of tail, arched line before the eye and spot between the ears black.

Var. End of nose blackish.

Antilope Scoparius, Schreb. Licht. S. t. 13.—A. Ourebi, Shaw; Lesson.—Ourebi, Buffon, not F. Cuvier.—A. melanura, Bechst. Inhabits S. Africa, Cape of Good Hope. Brit. Mus.

2. Scopophorus montanus. The Gibari.

Temple-spot large, deep (more than half an inch over), naked; fur greyish brown; cheeks paler; crown red brown; orbits, chest, belly, under side of tail and middle of the inner side of the upper parts of the legs white; end of tail and arched line before the eye black.

Antilope montanus, Rüppell, Zool. t. .- Scopophorus montanus,

Gray, Knowsley Menag. t. 5.

Inhabits W. and E. Africa; Abyssinia (Rüppell); Gambia. Called Gebari, or Mahomet's Antelope (Earl of Derby). Brit. Mus.

Very like the former, but grey brown, and the temporal spot much larger, deeper, more distinct and bald, both when alive and in the skin, so that it does not depend on the stuffing.

12. OREOTRAGUS, Gray, Sundevall; Tragulus, H. Smith, not Pallas.

Muffle large; tear-bag arched, transverse; horns subulate, elongate; hoofs squareish, high, compressed, much-contracted, concave beneath; false hoofs large, blunt; crown smooth; tail very short; hair thick, quill-like, spread out: female hornless; teats two.

1. OREOTRAGUS SALTATRIX. The KIANSI OF KLIPPSPRINGER.

Dark brown, yellow grisled; hair grey, brown at the end, with a short yellow tip; beneath whitish; edge of ears and feet above the hoofs black.

Antilope Oreotragus, Forster; H. Smith; Licht. Saugth. t. 15.— A. saltatrix, Bodd.; Harris, W. A. A. t. 24.—Oreotragus saltatrix, Sundev.; Gray, Knowsley Men. 8.

Inhabits S. Africa; Abyssinia (Rüppell). Brit. Mus.

Varies in brightness and depth of colour according to the season.

13. Nesotragus, Von Duben, Sundev. MSS.

"Muffle large, bald; lachrymal sinus deep, large; face and fore-head not crested; ears large; horns in males large; false hoofs none; tail very short.

Very like Neotragus in form and character.

1. NESOTRAGUS MOSCHATUS. The NESOTRAGUS.

Reddish grey; belly white; feet pale red; hair of back brown, with a pale subterminal band and black tip.

Nesotragus moschatus, Von Duben; Sundev. Vet. Ac. Oefversigt,

1846, 221; Pecora, 134; Gray, Knowsley Menag. 8.

Inhabits Zanzebar, east coast of Africa. Male and female in the Stockholm Museum."

14. NEOTRAGUS, H. Smith; Madoqua, Ogilby.

Muffle none; nose ovine; nostrils close together; false hoofs very small; tear-bag roundish; tail very short; crown crested.

1. NEOTRAGUS SALTIANA. The MADOQUA.

Antilope Saltiana, Blainv.—A. Hemprichianus, Ehrenb. S. P. t. 7; Licht. Saugth. t. 16.—Neotragus madoka, H. Smith.—A. Grimmia, Rüppell.—A. Hemprichii, Rüppell, Abyss. 25.—N. Saltiana, Gray, Knowsley Menag. 8.—N. Hemprichianus, Sundev.

Inhabits Abyssinia. Brit. Mus.

- †† A glandular line on the side of the face, in the place of the tear-bag; and the muffle large and bald.
 - 15. CEPHALOPHUS, H. Smith; Sylvicapra, Ogilby, Sundev.

Muffle large; tear-bag none, but a naked, glandular line, formed of two series of pores, on the side of the cheek; crown crested, ending in a tuft between the horns.

- * "Knees and hind legs tufted; ears and horns elongate; tear-bag small, under the eye, and a narrow naked streak on cheek."
 - 1. CEPHALOPHUS? QUADRISCOPA. The FOUR-TUFTED ANTE-LOPE.

"Buff, paler on the sides; tail, knee-tufts, front of nose, narrow inferior lateral and anal streak and streaks across legs blackish; lips, breast, belly, inside of limbs, vent and houghs white."

Antilope quadriscopa, H. Smith, G. A. K. iv. 261. t. 188.—Cepha-

lophus? quadriscopa, Gray, Knowsley Menag. 8.

"Inhabits Senegal."

This species is only known from Colonel H. Smith's description and figure.

- ** Knees not tufted; ears elongate acute; horns slender, elongated.
 - 2. CEPHALOPHUS GRIMMIA. The IMPOON or DUYKER or DUYKER Boc.

Yellowish brown, greyish in winter; hair yellowish, with blackish tip; forehead yellowish bay; inside of ears, chin, throat, abdomen and under side of tail white; feet, streak on the nose, up the legs, and upper part of tail black; ears elongate, nearly as long as head, acute; horns black, elongate, slender, base rugose and subangular in front.

Capra Grimmia, Linn. S. N. (ed.10) 70.—Moschus Grimmia, Linn. S. N. (ed. 12).—Antilope mergens, Blainv. Bull. Soc. Phil. 1817; H. Smith, G. A. K. v. 264; Licht. Saugth. t. 11; Harris, W. A. A. t. 15.—A. nictitans, Thunb. Mem. Petersb. 1811, iii. 312.—A. Burchellii, H. Smith, G. A. K. v. 262. adult in summer?—A. Ptoox, H. Smith, G. A. K. v. 265? jun.?—A. Platous, H. Smith, G. A. K. v. 266.—Ceph. Grimmia, Gray, Knowsley Menag. t. 1. f. 1, t. 2. f. 1, 2.

Inhabits S. Africa. Brit. Mus.

This species varies greatly in the intensity of the colours and in the extent of the black on the feet and nose. In one young specimen in the British Museum the black on the nose is quite deficient; though it has the bright colouring of the breeding-season, and is bright bay on the crown.

The specimen in the Museum of the London Missionary Society

(No. 8 Blomfield Street, Moorfields, formerly in Austin Friars), Case 5, described by Colonel H. Smith under the name of A. Platous, is the size and has the horns and ears of an adult C. Grimmia, but differs in being paler, and having no dark colour on the nose or feet; but it is evidently much bleached. It has certainly no relation to the C. sylvicultrix, with which Colonel Smith was afterwards inclined to place it as a variety (Griff. A. K. Syn. v. 344).

There are three species which have been called Antilope Grimmia:—

1. The Capra sylvestris africana of N. Grimm, Misc. Cur. Norimb. 1705, 131. t. 13, the authority for Capra Grimmii, Ray, Syn. 80, and Linn. S. N. (ed. 10) 70. Moschus Grimmia, Linn. S. N. ed. 12, from the Cape, of a dull grey colour. Probably the Duyker.

2. Le Grimme of Buffon, H. N. xii. 307. 329. t. 41. f. 2, 3, from

2. Le Grimme of Buffon, H. N. xii. 307. 329. t. 41. f. 2, 3, from a head sent from Senegal by Adanson; the Antilope Grimmia of Desmarest, F. Cuvier, and H. Smith, &c.; the Cephalophus rufilatus.

3. The A. Grimmia of Pallas, with large ears and a black streak to the horns, like C. Campbelliæ, but is from Guinea. I know of no species common to the W. and S. coast of Africa, so that it is probably yet to be distinguished.

The "Fitomba" or "Philantomba" appears to be the generic name

of all the W. African Cephalophi or Bush Antelopes.

3. CEPHALOPHUS CAMPBELLIÆ. The BLACK-FACED PHILAN-TOMBA.

Grey and black grisled, beneath white; cheeks, neck and chest yellowish; forehead yellow, with a black streak on the nose widening on the forehead and ending in a tuft behind the horns; feet and front of fore-legs reddish black; fur soft; hair grey, with black ring and tip; ears elongate acute.

Antilope Grimmia, Pallas, Spic. Zool. xii. 18. t. 1?—C. Burchellii, var. (C. Campbelliæ), Gray, Cat. B. M. 162.—C. Campbelliæ, Gray, Ann. and Mag. Nat. Hist. 1846, 164; Knowsley Menag. 9. t. 2. f. 3.

Inhabits S. Africa. Brit. Mus.

This species is at once known from the Duyker by being much darker and distinctly grisled or dotted, and the under side being much whiter.

We have an adult female of this species sent us as A. mergens, var. Burchellii, by M. Sundevall (the other specimen of the same name being a true Duyker), and a young specimen which has been in the British Museum for several years, sent from Africa, under the generic

name of Philantomba, by Mrs. Campbell.

The A. Grimmia of Pallas, Spic. Zool. i. 18. t. 3, which he describes as grey grisled, becoming brownish ash on the buttocks; throat, chest and beneath the body white; head and neck yellowish grey; a black streak between the horns, forming a fascia on the forehead and broader on the nose; fur softer than the Deer, but rough, of lower part of the neck rougher and more lax; feet and line on forelegs blackish; tail black above; ears rather acute: inhabits Guinea; agrees in most respects with this species, but most probably is yet to be procured from W. Africa.

- *** Knees not tufted; ears moderate, acute; horns short, conical, thick.
 - 4. CEPHALOPHUS MADOQUA. The ABYSSINIAN BUSH BUCK.

Yellowish brown, slightly punctulated with black; neck yellowish; limbs blacker; face-streak and feet black; hair rather rigid, close-pressed, reddish grey at the base, end polished yellow brown, with dark tips; forehead reddish.

Antilope Madoqua, Rüpp. Abyss. t. 7. f. 2; Sundev.—Madoqua, Bruce's Travels, vii. 360. t. 56.—C. Madoqua, Gray, Knows. Men. 9.

Inhabits Abyssinia. Mus. Frankfort.

This species is very distinct from C. coronatus, being darker, and the fur more rigid and close-pressed.

5. CEPHALOPHUS CORONATUS. The RED-CROWNED BUSH BUCK.

Pale yellowish brown; middle of back and front of fore-legs varied with a few scattered black hairs; crown bright bay; crest blackish brown, bay in front; feet and streak up the nose blackish; inside of ears, chin, throat, chest, belly and inner side of legs whitish; horns short, conical; ears about half as long as the head, acute.

Cephalophus coronatus, Gray, Ann. and Mag. Nat. Hist. x. 1842,

266. 1846, 164; Knowsley Menag. 9. t. 6. f. 1, 2.

Inhabits W. Africa; Gambia, Macarthy's Island. Mr. Whitfield called it *The Coquetoon*. Brit. Mus.

- **** Knees not tufted; ears moderate, rounded; horns conical, thick; without any streak over the eyes.
 - 6. Cephalophus sylvicultrix. The White-backed Bush Buck.

Blackish brown, minutely grisled; hair brown, with whitish tips; back with a large yellowish white spot, narrow in front; throat, chest and belly redder; crown, nape and legs darker; horns ——?

Antilope sylvicultrix, Afzelius, N. Act. Upsal. vii. 1238; H. Smith, G. A. K. t. 187.—C. sylvicultrix, Gray, Knowsley Menag. 10. t. 8. f. 1.

Inhabits Sierra Leone, in swampy places. Brit. Mus.

Varies in the size of the dorsal spot.

In the British Museum is a young male: length 29 inches; height 18; tarsus 6.9.

7. CEPHALOPHUS OGILBII. The BLACK-STRIPED BUSH BUCK.

Pale bay brown, with a deep black dorsal streak; beneath pale; crown and haunches brighter bay; neck and withers, and sides of the dorsal line varied with deep brown hairs; streak up the fore-leg, upper part of hock, feet (above the hoof) and end of tail blackish; horns short, thick, conical, very rugose on the inner front edges of the base.

Cephalophus Ogilbii, Gray, Ann. and Mag. Nat. Hist. 1842; Knowsley Menag. 10. t. 8. f. 2; Frazer, Zool. Typ. t. .—Antilope Ogilbii,

Waterh. P. Z. S. 1838, 60. 1842, 129.

Inhabits Fernando Po (J. Thompson, Esq.). Brit. Mus. Not half the size of the preceding.

8. CEPHALOPHUS DORSALIS. The BAY BUSH GOAT.

Dark bay; shoulders and legs darker; hair brown, a few on the haunches white-tipped; crown and nape, broad streak along the back to end of tail black; spot over each eye; lips, sides of chin, front of chest, under side of tail and inside of thighs pale brown.

Cephalophus dorsalis, Gray, Ann. and Mag. Nat. Hist. 1846, 165;

Knowsley Menag. 10. t. 7. f. 1.

Inhabits Sierra Leone: called Bush Goat. Brit. Mus. The head is very large, the skull short, broad, forehead rounded.

9. CEPHALOPHUS NIGER. The BLACK BUSH BUCK.

Sooty black, greyer in the front half of the body; chin, throat, abdomen and inside of thighs grey; forehead and crown dark bay and black mixed: cheeks pale brown and black varied; tail, end whitish.

Antilope niger, Mus. Leyden.—Cephalophus niger, Gray, Ann. and

Mag. Nat. Hist. 1846, 165; Knowsley Menag. 10. t. 7. f. 2.

Inhabits Guinea. British Museum. Sierra Leone (Mr. Whitfield).

Knowsley Museum.

In the British Museum there is a male from the Leyden Museum, nearly as large as the former.

10. CEPHALOPHUS NATALENSIS. The NATAL BUSH BUCK.

Bright red bay; nape, withers and feet varied with dark grey hairs; nose-streak short, blackish; lips, chin, upper part of throat and end of tail white; lower part of cheeks, throat and abdomen pale yellowish; crown and tuft bright red; horns short, conical.

Antilope natalensis, A. Smith, S. Afr. Quart. Journ. 217; Illust. Z. S. A. t. 32.—Cephalophus natalensis, Gray, Knowsley Menag. 10.

Inhabits S. Africa. Port Natal. Brit. Mus. Five specimens of different ages. Resembles C. Ogilbii in size and colouring, but wants the dorsal streak. The females are horned.

11. CEPHALOPHUS RUFILATUS. The COQUETOON.

Deep reddish bay; legs, nape, streak on the nose to the crown and broad streak on the back blackish grey; ears blackish; crest and upper part of tail black; cheeks rather paler; chin and abdomen pale yellowish; inside of ears whitish, with a brown spot on the outer side; horns conical, rather elongate, obscurely annulated, slightly recurved.

Cephalophus rufilatus, Gray, Ann. and Mag. Nat. Hist. 1846, 166; Knowsley Menag. 10. t. 9.—Antilope Grimmia, H. Smith, G. A. K.

v. 266.—Le Grimme, Buffon, H. N. xii. t. 41. f. 2, 3?

Var. 1. Sides paler, greyish red; forehead rough.

Le Grimme, F. Cuv. Mamm. Lithog. t. . not good.

Inhabits Sierra Leone, called Coquetoon. Brit. Mus.

The hair is rather paler at the base, of the dorsal streak grey, with

a blackish tip.

M. F. Cuvier's (Mamm. Lithog. t. .) figure is the pale variety, which Mr. Whitfield regards as distinct; he says it is called *Grimme* by the natives: the separate head of Cuvier's plate appears to have been taken from the *Guevei*.

***** Knees not tufted; ears moderate, rounded; horns short, thick, conical; head with a pale streak on each side over the eyes to the base of the horns.

12. CEPHALOPHUS MAXWELLII. The GUEVEI.

Grey brown or sooty brown; sides of head and body greyer; chin, throat, chest and belly whitish grey; abdomen and front of thigh white; broad streak over each eye to the base of the horns yellowish white; feet and end of nose rather darker; fur rather rigid; hair uniform.

Antilope Maxwellii, H. Smith, G. A. K. iv. 267.—A. pygmea, Pallas, Spic. xii. 18?—The Guevei, Buffon, H. N.—A. pygmea (Guevei), F. Cuv. Mamm. Lithog. t. . good.—A. Frederici, Laur.; Sundev.—A. Philantomba, Ogilby, P. Z. S. 1836, 121; 1839, 27.—Cephalophus Maxwellii, Gray, Knowsley Menag. 11. t. 12.

Inhabits W. Africa. Brit. Mus.

The adult male in the British Museum is bright sooty brown, darker near the rump; the female is nearly uniform pale grey brown. It is well figured by M. F. Cuvier. It is known from C. monticola by being larger, by the whiteness of the eye-streak, and of the front of the thigh and chest.

13. CEPHALOPHUS MONTICOLA. The NOUMETGE OF CAPE GUEVEL.

Grey brown; streak over the eyes, legs and outer part of thighs rufous; feet grey brown; chin, chest, abdomen, and under side of tail and inside of ears white; fur soft, grey, with intermixed rather rigid black hairs.

Antilope monticola, Thunb. Stockh. N. H. xxxii. t. 5.—A. cærulea, H. Smith, G.A. K. v. 855; Daniell's Afr. Scen. t.; Harris, W. A. A. t. 26.—A. perpusilla, H. Smith, G. A. K. v. 854.—A. pygmea, Licht. Saugth. t. 16; Sundevall.—Cephalophus monticola, Gray, Knowsley Menag. 11.

Inhabits S. Africa. Brit. Mus.

The colours vary in intensity; in a female in the British Museum, the rufous colour of the thighs and the white of the chest are more distinct than in the male, but this may depend on the season when they were killed. A very young fawn (perhaps hardly born), which was brought home from the Cape by M. Verreaux, is darker, and the reddish tint extends over nearly the whole body.

Thunberg described the South African species, but says that there is a specimen in the Stockholm Museum, brought by Afzelius from Sierra Leone, which agrees with his animal; so he evidently did not

observe the difference between the two species.

14. CEPHALOPHUS MELANORHEUS. The BLACK-RUMPED GUEVEI.

Grey brown; throat and sides paler; rump and upper part of tail black; chin, chest, abdomen, back and front edge of thighs and under part of tail white; narrow streak over the eyes whitish; feet like the back; fur soft, pale grey, with intermixed rather rigid black hairs.

Cephalophus melanorheus, Gray, Ann. and Mag. Nat. Hist. 1846; Knowsley Menag. 11. t. 10.—C. Philantomba, Gray, Cat. Mamm. B. M. 163 (not H. Smith).

Inhabits Fernando Po (J. Thompson, Esq.). Brit. Mus.

This species is coloured like the Guevei from W. Africa, but smaller, and has the soft fur and interspersed black hair of the Cape Guevei, C. monticola, but it is easily known by the black mark on the rump.

15. CEPHALOPHUS PUNCTULATUS. The GRISLED GUEVEI.

Dark fulvous brown; sides and legs rather paler; narrow streak over the eyes and inside of ears pale brown; chin, throat, chest, belly and front of thighs and under part of tail white; hair grey at the base, with brown ends and yellow subterminal rings; crown and upper part of tail darker; feet pale, varied.

Cephalophus punctulatus, Gray, Ann. and Mag. Nat. Hist. 1846;

Knowsley Menag. 11. t. 11. f. 1.

Inhabits Sierra Leone. Brit. Mus. A young specimen presented

by Colonel Sabine, R.E.

It is at once known from the other Gueveis by the fulvous colour which is produced by the yellow subterminal rings of the hairs.

Colonel H. Smith indicates a species under the name of C. Philantomba, but so indistinctly, that it is impossible to know for what it is intended.

16. CEPHALOPHUS WHITFIELDII. The WHITE-FOOTED GUEVEI.

Yellowish ash; shoulders, outside of limbs and hinder parts of back rather darker; ears and crown pale yellowish brown; streak over the eyes, cheeks, throat, belly, inside of the limbs and ring round the feet above the hoof ashy white; hair ashy grey; of the back brown at the end, with a yellow tip.

Cephalophus Whitfieldii, Gray, Knowsley Menag. 12. t. 11. f. 2. Inhabits Gambia (Mr. Whitfield). Mus. Brit. Young. Smaller than the Grisled Guevei, and much paler and yellower.

****** No tear-bag nor glandular streak on the face, and the muffle large and moist; crown smooth.

16. Nanotragus, Sundev.; Neotragus, part H. Smith.

Horns very short, conical; legs slender; tail subpectinate; hoofs small, triangular, false hoofs none; crown not crested; ears small, rounded.

1. NANOTRAGUS PERPUSILLUS. The ROYAL ANTELOPE.

Fulvous; throat, belly and edge of thighs and tip of tail white.

Capra perpusilla, Linn. Mus. Ad. Fred. i. 12.—Moschus pygmeus, Linn. S. N. (ed. 12) 92.—Antilope pygmea, Pallas, Spic. Zool. xii. 18; Cuv. D. S. N. ii. 241; H. Smith.—A. regia, Erxleben, 278.—A. spiniger, Temm. Monog.—Nanotragus regius, Gray, Knowsley Menag. 12.—Royal Antelope, Penn.

Inhabits W. Africa; Guinea. Brit. Mus.

The smallest-hoofed animal. The feet were formerly often used as tobacco-stoppers, and are figured mounted by Seba, t. 43. f. a, b; Buffon, H. N. xii. t. 42, 43.

17. Eleotragus, Gray; Redunca, H. Smith; Cervicapra, Blainv., Sundev.; Nagor, Laur.; Sylvicapra, Ogilby.

Horns conical, bent back and then forward at the top; hoofs and false hoofs rather large; tear-bag none; teats four; inguinal pores distinct.

- † Horns erect, slender, and face narrow; nose swollen; muffle large, extended far behind the nostrils; fur woolly hair. Pelea. S. Africa.
 - 1. Eleotragus Capreolus. The Rehbock or Peele.

Temple-spot none; head slender, compressed; horns erect, scarcely diverging, very slender; fur short, woolly, grey brown; back redder; throat and beneath white; end of nose and chin blackish; feet darker.

Antilope Capreolus, Thunb.; Afzelius, N.Act. Upsal. vii. 251.1818; Licht. Saugth. t. 8; Harris, W. A. A. t. 25. f. 1.—A. villosa, Burchell, 1822; H. Smith.—A. lanata, Desmoul.—Eleotragus Capreolus, Gray, Knowsley Menag. t. 12. from life.

Inhabits S. Africa. Brit. Mus. Knowsley, living.

- ++ Horns diverging, thick, conical; head broad; nose not swollen.
- * Muffle large, extended far behind nostrils; fur grisled, harsh, straight, with a subterminal pale band, and often whorled; a naked spot on the temple. South Africa.
 - 2. ELEOTRAGUS ARUNDINACEUS. The INGHALLA OF REIT BOCK.

Head broad; temple-spot naked; horns diverging, conical, tapering. Brown, yellow grisled; hair pale brown, with a subterminal yellow band; cheeks and neck yellower; base of ears, chest, belly and insides of the legs and under side of bushy tail white; front of legs black.

Antilope arundinacea, Shaw, Zool.—A. Eleotragus, Schreb. Licht. 9; H. Smith; Harris, W. A. A. t. 26.—A. redunca, H. Smith; Gray, Cat. B. M.—A. cinerea, Afzelius, 1815.—A. Lalandii, Desm.; Fischer.—A. Lalandiana, Desm.—Eleotragus arundinaceus, Gray,

Knowsley Menag. 12.

Var. Larger.

A. Isabellina, Afzelius, N. Act. Upsal. 1815, vii. 244; Licht. t. 10; H. Smith; Sundev.

Var. With a large black rhombic spot on the back of the head behind the ears. Female in Brit. Mus.

Inhabits S. Africa, in marshy places. Brit. Mus.

Afzelius, Lichtenstein, H. Smith and Sundevall have described two species of this genus as coming from South Africa; the smaller they call A. Eleotragus, and the larger A. Isabellina. The latter author has given a comparative character between the two kinds, but he has only seen two specimens of the former (a male at Berlin and a female

at Stockholm), and several specimens of the larger kind. I have examined with care a series consisting of four males and five females from different parts of South Africa, and can find no distinction between them, except a slight difference in the length of the fur and in Two specimens in the British Museum are larger than the rest, and have the tarsus one-fourth longer than the others; they have a shorter fur and are of a rather brighter colour, and the front of the leg is blacker; but the fur and colour probably depend on the season when they were killed. In these respects they agree with Sundevall's description of A. Isabellina, but they both have the temporal spot large and quite naked, while Prof. Sundevall described the spot on this species as pubescent. The female of the larger specimen has the black spot on the back of the head; some of the smaller ones have the temple-spot much smaller and less naked than the The two larger specimens have a single whorl of hair in the middle of the back; the others, with longer hair, show the whorls more distinctly, and have the hair from the central whorls to the shoulders forming a more or less diverging line. After examining these specimens and those in other collections, I conclude that they form only a single species. M. Sundevall, in a note just received, observes, "Mr. Wahlberg considers A. Isabellina and A. Eleotragus as very distinct, and our specimens seem to show a difference, though not very well expressed. Also I have committed a mistake, for the young female described in my Synopsis as γ . under A. Isabellina, is really A. Eleotragus."

- ** The muffle smaller, scarcely extending beyond the nostrils; fur fulvous, not grisled; hair grey, with yellow tips; tail less bushy.
 W. and E. Africa.
 - 3. Eleotragus reduncus. The Wonto or Nagor, or Red Antelope.

Head broad; horns conical, thick at the base, diverging; fulvous brown, rather pale on the sides; hair soft, yellow tipped, all in regular order; chin, throat, spot under ears and over eyes, inside of limbs, under side of tail and lower side of body white; front of leg sometimes blackish.

Antilope redunca, Pallas?; Rüppell, Abyss. t. 7, good.—A. rufa, Afzelius, 250, from Buffon.—A. reversa, Pallas?—Nagor, Buffon, xii. t. 46?—Oureby, F. Cuv. Mamm. Lithog. t. ♀.—A. Isabellina, Gray, Cat. Mamm. Brit. Mus.—Eleotragus reduncus, Gray, Knowsley Menag. 13. t. 13.

Inhabits "Senegal." Mus. Frankfort and Mus. Leyden. Gambia (Whitfield), where it is called Wonto. Male and fawn, British Museum, and a young male living at Knowsley, from the Gambia.

Var. Larger, colour brighter.

A. Bohor, Rüppell, Abyss. t. 7; Sundev. Inhabits Abyssinia. Mus. Frankfort.

Pallas and Afzelius's account of this species is derived from Buffon's description; both he and Adanson (Hist. Nat. xii. 326) say that it is "all pale red," and Buffon further observes that it has not the Ann. & Mag. N. Hist. Ser. 2. Vol. viii.

white on the belly of the Gazelles. This does not agree with our animal, which is white in several parts, but certainly not so white as the Gazelle, and has black on the legs; but as yet no other animal has been brought from West Africa, which better agrees with their account

or figure.

M. Sundevall considers specimens of the Nagor of Senegal and the Bohor of Abyssinia, in the Frankfort Museum, as distinct, the former having the hair of the back whorled, the fore-leg with a dark stripe, and the latter having the hair not whorled and the legs pale. Our specimens, from Gambia, have the hair not whorled, and more or less distinct streaks on the fore-legs; hence I am inclined to believe the Nagor and the Bohor to be alike. Sundevall's animal may be the Kob, but that has only one whorl on each end of the back, a nearly cervine muffle, and the end of the tail black.

When in Frankfort, I observed that the male Antilope Bohor, from Abyssinia, was rather larger than the male of "A. redunca," from Senegal, in the same collection, and much brighter, and the horns more slender; the female was darker and browner than the male; both sexes have more black on the carpus and tarsus than in the spe-

cimen of A. redunca in the same museum.

Colonel Hamilton Smith formed a genus for two pairs of horns on part of the frontal bones in the College of Surgeons belonging to this group of Antelopes, which he called Raphicerus acuticornis and R. subulata (Griffith, A. K. t. 181. f. 2, 1). The figures are not sufficient to identify the species, and we now know that the horns of the same species differ greatly in individuals of the same species, and during the growth of the same specimen. R. acuticornis may be the horns of the Duyker Boc, Ceph. Grimmia?

[To be continued.]

LINNÆAN SOCIETY.

December 3, 1850.—Robert Brown, Esq., President, in the Chair.

Dr. Adolph Schlagintweit, at the request of the President, gave a summary of some of the principal results of the investigations of himself and his brother into the Vegetation of the Alps in connexion with height and temperature, as contained in their "Unter-

suchungen ueber die physikalische Geographie der Alpen."

He stated that very remarkable differences are to be observed in the limits of the altitude of vegetation in the district of the Alps. In the mean results for large divisions, we may plainly recognize the influence of geographical position, as well as that of the nature of the soil, and of the massiveness of the mountain range. The limit in fact becomes higher the more we approach the southern and western groups, a phænomenon which is connected with the general changes of climate. The mean temperature varies in these latitudes from 0.5° to 0.7° of Celsius for one degree; and at the same time the isothermal lines show an evident inclination from west to east. Many very essential differences cannot, however, be explained by geographical position alone; another important influence is dependent on